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ABSTRACT

This issues paper, sixth in a series of eight, is intended to distill formative evaluation questions on topics that are central to the development of the higher and further education information environment in the United Kingdom. In undertaking formative evaluation studies, the Formative Evaluation of the Distributed National Electronic Resource (EDNER) team has noted that some distributed national resource (DNER) resources and projects are not as accessible as they should be. Higher education in the United Kingdom is not unique in this regard. In spite of the potential of technology to widen access to information, many people are not able to access this information because of location, disabilities, or the limitations of the equipment they have. Online materials must be designed to work with assistive technologies through "accessible" Web design. Some tips for accessibility are summarized, and some resources for checking Web pages for accessibility are described. (SLD)

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Web Accessibility Issues for Higher & Further Education

EDNER Project

Issues Paper 6

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Web Accessibility Issues for Higher & Further Education

EDNER (Formative Evaluation of the Distributed National Electronic Resource) Project

Issues Paper 6

Information needs to be made accessible for a number of reasons. For example:

- Information is increasingly being provided electronically and sometimes this is the only format offered.
- According to the Royal National Institute for the Blind's report 'Get the message online', if businesses do not make their web sites accessible, they will be "potentially losing out on 8.5 million disabled customers". The same can be said for educational institutions.
- Legislation such as the Disability Discrimination Act 1995 (covers goods and public services) and the Special Educational Needs and Disability Act 2001 (covers FE and HE) now requires organisations to take steps to ensure their goods and services, including electronic information, are accessible.

In undertaking formative evaluation studies, the EDNER team has noted, by drawing on the expertise of colleagues in CERLIM who specialise in this area, that some DNER resources and projects are not as accessible as they might be. UK higher education is not unusual in this regard. Despite the potential of technology to widen access to information by allowing more people to access information from a location convenient to them, technology can still present barriers, for example for people who:

- May not be able to see, hear, move or process some types of information.
- May have difficulty reading or comprehending text.
- May not be able to use a keyboard or mouse.
- May have a text-only screen, a small screen, or a slow Internet connection.
- May not be able to speak or understand fluently the language in which the document is written.
- May be in a situation where their eyes or hands are busy.

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- May have an early version of a browser, a different browser, a voice browser or a different operating system.

Assistive technologies are computer-related aids, which can be added to existing technology to enable people with disabilities to 'read' online materials. (NB: assistive technology may also be referred to as 'access', 'enabling' or 'adaptive' technology). They include:

- Screen Readers which read out the contents of the screen (or at least those parts in text).
- Screen Magnification which enlarges all or part of the screen (but of course the whole screen cannot then be seen at once).
- Braille Bars which represent the six-dot tactile code of Braille electronically and respond to the text presented on screen.
- Talking Web Browsers which convert web pages directly into speech.
- Speech input, which allows the user to speak commands or to dictate to the computer rather than using the mouse and/or keyboard.

Some other assistive technologies, such as haptic devices which enable people to 'feel' shapes are under development.

A major problem is that unless online materials are designed in a way that can be interpreted by the assistive technologies, barriers to access will still exist.

Accessible web design, or 'design for all', can remove these barriers and help to ensure ALL users can read systems and interfaces as well as ensure information can be interpreted by the technology used. The main recommendations for ensuring web accessibility of resources are:

- Images and animations: provide meaningful descriptions using the ALT text tag.
- Sound files: provide captioning for all sound files.
- Page organisation: clear and consistent layout is good for everyone. Where possible use Cascading Style Sheets (CSS) or Extensible Stylesheet Language (XSL) for layout and style.
- Colours: must be contrasting with consideration for people who have problems with certain colours, (e.g. colour blindness).
- Fonts: try to use a plain font as this is easier to read - avoid italics and fussy fonts

- Font size: this Issues Paper is provided by default in 14pt to illustrate the size which a person with partial sight may need. The other Issues Papers, since they are all provided electronically, can of course be re-sized to suit the individual user.
- Tables: make sure text will read line by line clearly as well as cell by cell.
- Frames: must be labelled properly. Ideally the site should include a *No Frames* version.
- Hypertext Links: use meaningful text to describe a link. avoid 'click here', instead try something like 'click here to go to the university home page'.
- Charts, graphs, and statistical information: provide descriptions using the "D" link or the "Longdesc" attribute..
- Online Chat: screen readers may not be compatible with this. Some people may find it hard to keep up with the pace of a 'chat' - especially if there are several people involved.
- Quizzes: some people may need extra time to complete a quiz. Also it can be confusing if the Quiz opens as a new frame or window.

A variety of methods are available to check your web pages for accessibility:

- The World Wide Web Consortium Accessibility Initiative (W3C/WAI) provides a Web Content Accessibility Guidelines and a Quick Tips Checklist, which cover the main accessibility features described above.
- Bobby is a program available online which uses the W3C recommendations to check the accessibility of individual web pages and produces a report with recommendations.
- LynxView is a program available online which will convert web pages to show what a site would look like in text only - and how a screen reader might interpret it.
- Validation services are increasingly including accessibility in their list of checkpoints. W3C Validation is just one example.
- Finally, use people! Software programs like Bobby and Lynx can miss some accessibility errors and although Bobby suggests manual checks for colours, fonts etc, it cannot actually check things like this itself. Therefore always try to test pages using a variety of people with different needs and abilities.

Advice and guidelines on the subject of accessible web design are plentiful:

- W3C looks at all aspects of Internet provision and development, in particular at standards. In 1997 it established the WAI to look at web accessibility and universal design.
- TechDis: a service offered to FE and HE aimed at enhancing access for those with learning difficulties and/or disabilities, to learning and teaching, research and administration across higher and further education through the use of information and communication technologies.
- Best Practice Manual (Hopkins, 2000): offers advice on providing library services to blind and visually impaired people. Written by various experts in the field, it includes a chapter on access technology and a chapter on accessible web design and although intended primarily for public libraries most of its recommendations apply equally to the academic sector.
- REVIEL Project: undertaken at CERLIM to explore how electronic library services might be made fully accessible, it includes a web page with *Good Design Principles*.

Useful references

- Bobby Accessibility Checker: http://www.cast.org/bobby/
- Great Britain. *Disability Discrimination Act*. London: HMSO, 1995.
- Great Britain. *Special Educational Needs and Disability Act 2001*. London: The Stationery Office Limited, 2001.
- Hopkins, L. ed. *Library services for visually impaired people: a manual of best practice*. Resource: the Council for Museums, Archives and Libraries, 2000. Library and Information Commission Research Report 76. STV/LIC Programme Report 10.
- LynxView: http://www.delorie.com/web/lynxview.html
- National Library for the Blind (The Manual of Best Practice can be downloaded from here): http://www.nlbuk.org/
- REVIEL Project Website: http://www.cerlim.ac.uk/projects/reviel.htm
- Royal National Institute for the Blind Campaign for good web design:http://www.rnib.org.uk/digital/welcome.htm

- TechDis: http://www.techdis.ac.uk/
- World Wide Web Consortium: http://www.w3.org/
- W3C Web Accessibility Initiative: http://www.w3.org/WAI/

EDNER Key Issues papers are intended to distil formative evaluation questions on topics which are central to the development of the UK's higher and further education Information Environment. They are presented as short check-lists of key questions and are addressed to developers and practitioners. Feedback to the EDNER team is welcomed.

Please address enquiries and comments to the EDNER Project Team at cerlim@mmu.ac.uk

EDNER is being undertaken by CERLIM at the Manchester Metropolitan University with CSALT at Lancaster University

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